IS 3176 (1983): Top rollers for ring and speed frames [TXD 14: Machinery for Fabric Manufacture]

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IS : 3176 - 1983

Indian Standard

(Reaffirmed - 2012)

SPECIFICATION FOR TOP ROLLERS FOR RING AND SPEED FRAMES

(Second Revision)

UDC 677·052·948·4

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2 *September* 1983

AMENDMENT NO. 2 DECEMBER 1985

TO

IS : 3176-1983 SPECIFICATION FOR TOP ROLLERS FOR RING AND SPEED FRAMES

(Second Revision)

(*Page* 3, *clause* **0.2**, *line* 2) — Delete the words ' and without '.

(*Page* 3, *clause* **1.1**) — Delete the words ' fixed boss type '.

(*Page* 3, *clause* **1.1.1**) — Add the following new clauses and renumber the subsequent clauses accordingly:

' **2. TYPES**

2.1 The top rollers shall be any of the following two types:

Type 1 — Fixed boss type (*see* Fig. 1).

Type 2 — Loose boss type with non-removable (non-detachable) shell (*see* Fig. 2). '

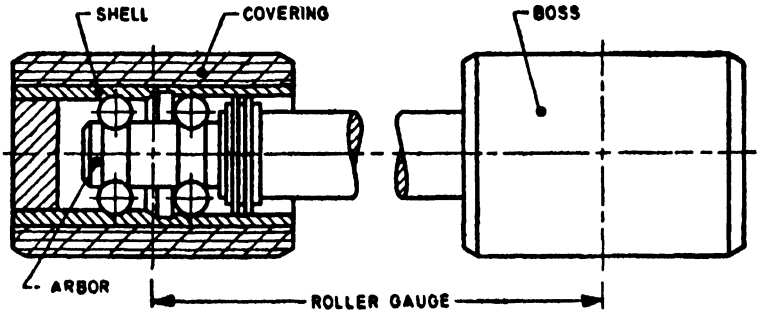

FIG. 2 A TYPICAL LOOSE BOSS TYPE ROLLER WITH NON-REMOVABLE (NON-DETACHABLE) SHELL

(*Page* 3, *clause* **2.1**) — Add the words ' or Fig. 2 ' at the end of the sentence.

(*Page* 5, *clause* **4.2.1**) — Substitute ' Fig. 3 ' *for* ' Fig. 2 '.

(*Page* 6, *Fig.* 2) — Renumber as ' Fig. 3 '.

(TDC 30)

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(Second Revision)

Alteration

(*Page 4, Note under clause 3.3*) - Delete.

(TDC 30)

Reprography Unit, ISI, New Delhi, India

Indian Standard

SPECIFICATION FOR TOP ROLLERS FOR RING AND SPEED FRAMES

(Second Revision)

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(*Continued on page* 2)

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Indian Standard

SPECIFICATION FOR TOP ROLLERS FOR RING AND SPEED FRAMES

(Second Revision)

0. FOREWORD

0.1 This Indian Standard (Second Revision) was adopted by the Indian Standards Institution on 31 March 1983, after the draft finalized by the Spinning Machinery (Cotton System) Sectional Committee had been approved by the Textile Division Council.

0.2 This standard was published in 1965 and subsequently revised in 1971. In this second revision, loose boss type rollers with and without removable shells have been excluded as these types of top rollers are not in use now. This opportunity has also been taken to modify the requirements for the material for manufacture of arbors and shells with raceways.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies requirements for fixed boss type antifriction bearing top rollers for use in ring spinning and speed frames.

1.1.1 This standard does not lay down requirements for bearings used in conjunction with the top rollers and cots used as covering.

2. NOMENCLATURE

2.1 For the purpose of this standard, the nomenclature of the components of the rollers shall be as indicated in Fig. 1.

*Rules for rounding off numerical values (*revised*).

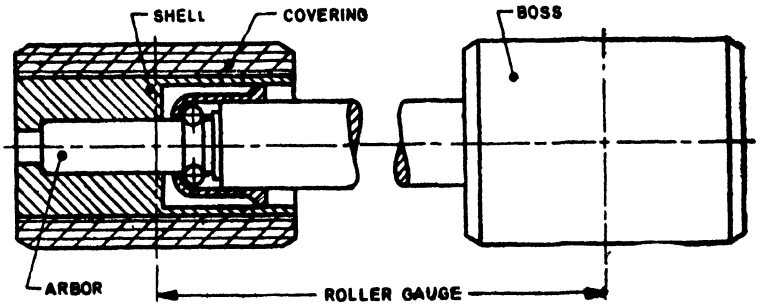

FIG. 1 A TYPICAL FIXED BOSS TYPE ROLLER

3. MANUFACTURE

3.1 Material — The arbors and shells with raceways shall be manufactured from high carbon-chromium steel conforming to Designation 103Cr2 of IS : 4398-1972* or its equivalent.

3.2 Roller Gauge — The roller gauge (standard centre-to-centre distance of the two bosses of top roller) should suit the spindle gauge (*see* IS : 5938 - 1970†).

3.3 Load-Bearing Capacity — The load-bearing capacity of the top rollers shall be in line with the drafting system.

NOTE — The manufacturer should specify the load-bearing capacity of the rollers.

3.4 Finish — The outer surface of the shells of the rollers shall be suitably prepared to facilitate their covering with synthetic cots.

NOTE — Grooves, if provided, shall have depth as agreed to between the buyer and the seller.

3.5 Freedom from Defects — The top rollers shall be free from any trace of dirt, scale and rust and manufacturing defects.

4. REQUIREMENTS

4.1 Diameter — Both the shells of the top rollers shall have the same diameter as agreed to between the buyer and the seller. However, tolerance of $^{+\ 0}_{-\ 0{\cdot}05}$ mm on the agreed diameter shall be permissible.

*Specification for carbon-chromium steel for the manufacture of balls, rollers and bearing races (*first revision*).

†Spindle gauges for cotton ring spinning and ring doubling (twisting) frames.

4.1.1 The diameter of the shells shall be measured with suitable callipers measuring to an accuracy of 0·01 mm.

4.2 Run-out (Total Indicator Reading) — The run-out of the top rollers with covering shall be not more than 0·06 mm (TIR) and without covering (only for apron top roller) not more than 0·05 mm (TIR).

4.2.1 The run-out of the top rollers shall be measured with suitable dial indicators, by clamping the arbor fast on an inclined surface (*see* Fig. 2). The contact point of the dial indicator shall be with steel/ carbide/ruby ball, to avoid penetration into the covering.

5. DESIGNATION

5.1 The top rollers shall be designated as under:

Roller gauge in mm × bare roller diameter in mm × length of the shell in mm

Example :

'65 × 19 × 33' will indicate 65 mm roller gauge, 19 mm bare roller diameter and 33 mm length of the shell.

6. LUBRICATION AND PACKING

6.1 The top rollers shall be suitably greased and given a thin coat of rust-preventive oil all over taking care that the oil does not penetrate the bearing. The top rollers with cots shall be greased only at the sides.

6.2 The top rollers shall thereafter be wrapped in wax-coated paper or put in polyethylene bags. An appropriate number of the rollers shall then be packed in a suitable container.

7. MARKING

7.1 Each container of the top rollers shall be marked with the following:

a) Manufacturer's name, initials or trade-mark, if any;

b) Designation of the top rollers;

c) Number of top rollers in the container ; and

d) Lot/batch number.

NOTE — To facilitate distinction of top rollers manufactured by different manufacturers, every manufacturer should ensure that the top rollers manufactured by him are distinguishable.

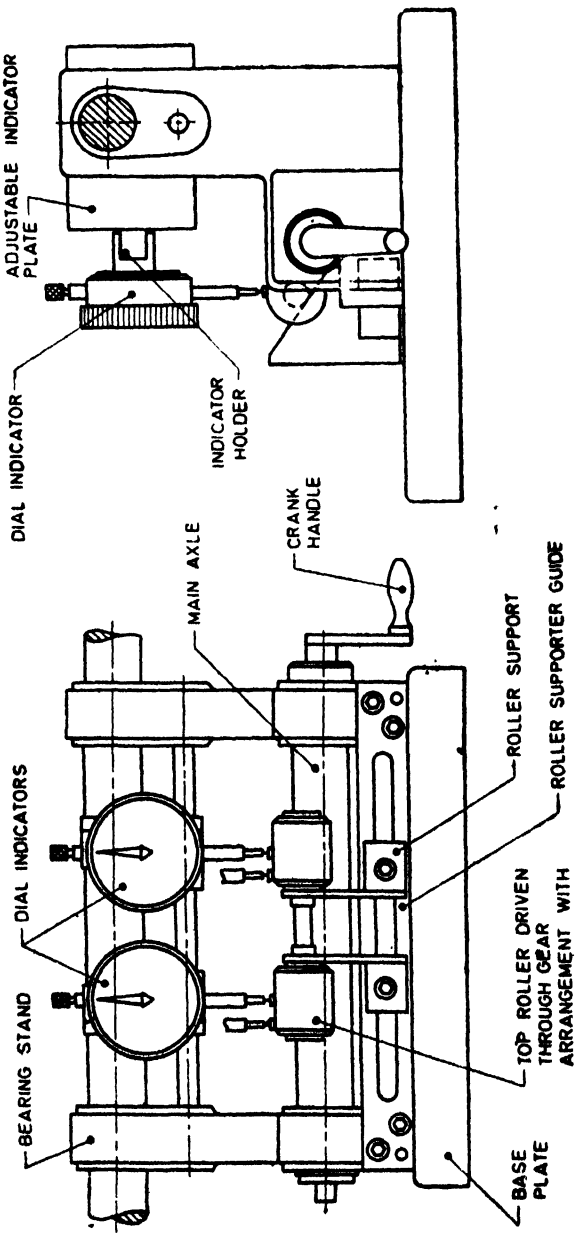

FIG. 2 A TYPICAL ARRANGEMENT FOR MEASURING RUN-OUT OF TOP ROLLER

7.1.1 The containers may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Definition
Force	newton	N	1 N = 1 $kg.m/s^2$
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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Aeronautical textiles
Chemical test methods
Colour fastness of textile materials
Cotton fabrics — handloom, khadi, and mill-made
Dyestuffs
Grading of fibres and yarns
Grading of raw silk
Hosiery
Jute — bags and fabrics
Jute mill accessories
Narrow fabrics
National flag of India
Nylon fabrics
Packaging codes
Physical test metods
Rayon fabrics
Rayon fabrics, handloom
Ropes and Cordages
Sampling of textiles, methods for
Silk fabrics — handloom and Khadi
Sizing and finishing materials
Spinning machinery components
Terminology
Textile floor coverings
Textile materials for fishing
Textile mill accessories (other than jute mills)
Twines
Weaving machinery components
Wool fabrics — handloom, khadi, and mill-made
Yarn and similar structures
Unclassified

INDIAN STANDARDS INSTITUTION

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones : 26 60 21, 27 01 31 **Telegrams : Manaksanstha**

Regional Offices:		Telephone
Western : Novelty Chambers, Grant Road	BOMBAY 400007	89 65 28
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